

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,476	03/09/2001	Ewerton L. Madruga	UC2000-311-2	5888
8156	7590	08/03/2004	EXAMINER	
JOHN P. O'BANION O'BANION & RITCHEY LLP 400 CAPITOL MALL SUITE 1550 SACRAMENTO, CA 95814			BAROT, BHARAT	
			ART UNIT	PAPER NUMBER
			2155	

DATE MAILED: 08/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,476

Applicant(s)

MADRUGA ET AL.

Examiner

Bharat N Barot

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/21/2001.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Drawings

2. This application has been filed with informal drawings, which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCanne (U.S. Patent No. 6,611,872) in view of Pan (U.S. Patent No. 6,615,273).

5. As to claim 1, McCanne teaches a method of multicast communication within a broadcast network, comprising: defining a shared multicast mesh of routers for each multicast group, multiple paths are established between any two routers; and forwarding packets from a source connected within the multicast mesh of the group (figure 6; column 12 line 39 to column 13 line 18; column 16 line 30 to column 17 line 43; and column 30 line 28 to column 31 line 5).

However, McCanne does not explicitly teach that forwarding packets from a source connected within the multicast mesh of the group along the reverse shortest path to the receiver.

Pan explicitly teaches a method of multicast communication within a broadcast network, comprising: forwarding packets from a source connected within the multicast mesh of the group along the reverse shortest path to the receiver (abstract; figures 3s; column 6 line 44 to column 7 line 15; and column 8 lines 15-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Pan stated above in the method of McCanne as stated above because it would have increased over all system efficiency and performance by reducing network latency and processing time.

6. As to claim 2, McCanne teaches that the routers are configured to accept unique packets being received from any neighboring router within the multicast mesh (abstract; column 11 line 51 to column 12 line 35; and column 18 lines 36-67).

Art Unit: 2155

7. As to claims 3-5, Pan teaches that the routers maintain the mapping of reverse shortest path to the receivers; routers maintain reverse shortest path mapping by sending out a heartbeat message to successors when packets arrive through members other than their respective reverse shortest path, the heartbeat message as received by the successor triggers a push join operation to force the successor and all routers in the path to the traffic source to join the mesh; and routing is established between routers such that network flooding with data or control packets to establish a routing structure is not required (abstract; figures 1-3s; column 6 line 37 to column 8 line 4; and column 8 lines 15-43 and 45-65). Note: Also see the US Patent of McCanne column 26 line 15 to column 28 line 11.

8. As to claim 6, McCanne teaches that the routers for sender-only hosts join the multicast mesh in simplex mode (figures 4s; and column 22 line 47 to column 23 line 31).

9. As to claims 7-8, McCanne teaches that the routers share group membership reports with neighbors and track relationships between neighbors and groups; and multicast addresses are mapped to one or more cores as part of a group membership report (column 19 lines 1-26; column 25 lines 40-50; and column 26 line 16 to column 27 line 58).

Art Unit: 2155

10. As to claim 9, McCanne teaches that the routers are configured to allow the definition of multiple cores for a group within the multicast mesh (figures 1-2; column 12 line 39 to column 13 line 18; column 16 line 65 to column 18 line 34; and column 22 line 47 to column 23 line 32).

11. As to claim 12, it is also rejected for the same reasons set forth to rejecting claim 1-5 above. Additionally, Pan teaches that the caching packet identifiers of forwarded packets; and forwarding a multicast packet from a neighboring router if the packet identifier is not contained within the cache (figure 2; and column 5 line 6 to column 6 line 43).

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

13. Claims 10-11 are rejected under 35 U.S.C. 102(e) as being anticipated by McCanne (U.S. Patent No. 6,611,872). McCanne's patent meets all the limitations for claims 10-11 recited in the claimed invention.

Art Unit: 2155

14. As to claim 10, McCanne teaches a method of allowing a host to join a multicast mesh for multicast communication within a broadcast network, comprising: determining the address of a first multicast group to which the host desires to join; interacting with a first designated router, by the host, requesting that it gain membership in the first multicast group; announcing membership in the first multicast group if the first designated router joining has multiple neighboring routers which are duplex members of the first multicast group; and sending a join request for membership in the first multicast group to neighboring routers if one or fewer of the neighboring routers are duplex members of the first multicast group (column 19 lines 1-26; column 22 line 47 to column 23 line 31; column 27 lines 8-58; and column 29 line 15 to column 31 line 5).

15. As to claim 11, McCanne teaches that the routers are configured to generate an acknowledgement to the join request, such that non-core routers can acknowledge group membership (column 19 lines 1-26)

Additional References

16. The examiner as of general interest cites the following references.

- a. Kondylis et al, U.S. Patent No. 6,621,805.
- b. Grossglauser et al, U.S. Patent No. 6,353,596.
- c. Yang et al, U.S. Patent No. 6,088,333.
- d. Wicki et al, U.S. Patent No. 6,003,064.

Art Unit: 2155

Contact Information

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bharat Barot whose telephone number is (703) 305-4092. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

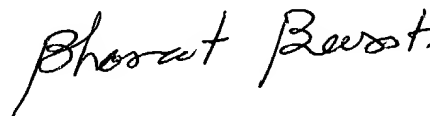
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam, Hosain, can be reached at (703) 308-6662. A central official fax number is (703) 872-9306.

Any inquiry of general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-3900.

Patent Examiner Bharat Barot

Art Unit 2155

July 13, 2004



**BHARAT BAROT
PRIMARY EXAMINER**